

AMPCO.165A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Chen-Fa Hsieh  
Appl. No. : 09/605,282  
Filed : June 28, 2000  
For : DECORATIVE ALERT SYSTEM  
Examiner : S.F. Husar  
Group Art Unit : 2875

13/Priority  
P. Walker  
12-11-03

SUBMITTAL OF CERTIFIED TRANSLATION UNDER 37 C.F.R. § 1.55(a)(4) and MPEP § 201.15

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicant encloses herewith a certified translation of Taiwanese application number 88218182, filed October 26, 1999, to which the above-identified application claims priority.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 12 June 2003

By: Daniel E. Altman  
Daniel E. Altman  
Registration No. 34,115  
Attorney of Record  
Customer No. 20,995  
(949) 760-0404

H:\DOCS\DEA\DEA-3802.DOC  
061203



TRANSPERFECT | TRANSLATIONS

## Certificate of Accuracy

I, Ron P. Tan of TransPerfect Translations, Inc. do hereby declare that the following is to the best of my knowledge and belief a true and correct translation of Chinese (R.O.C.) Patent Application Number 088218182 from Chinese into English. Copy of both the Chinese source material and the English translation are attached.

I so declare under penalty of perjury under the laws of the State of California on this 29th day of May 2003.

Ron P. Tan  
TransPerfect Translations, Inc.  
Los Angeles, California

ATLANTA  
BOSTON  
CHICAGO  
DALLAS  
DETROIT  
FRANKFURT  
HOUSTON  
LONDON  
LOS ANGELES  
MIAMI  
MINNEAPOLIS  
NEW YORK  
PARIS  
PHILADELPHIA  
SAN DIEGO  
SAN FRANCISCO  
SEATTLE  
WASHINGTON, DC

TPT Reference: 78448



中華民國經濟部智慧財產局

INTELLECTUAL PROPERTY OFFICE  
MINISTRY OF ECONOMIC AFFAIRS  
REPUBLIC OF CHINA

茲證明所附文件，係本局存檔中原申請案的副本，正確無訛，  
其申請資料如下：

This is to certify that annexed is a true copy from the records of this  
office of the application as originally filed which is identified hereunder.

申請日：西元 1999 年 10 月 26 日  
Application Date

申請案號：088218182  
Application No.

申請人：昱昌企業有限公司  
Applicant(s)

局長  
Director General

陳明邦

發文日期：西元 2000 年 6 月 12 日  
Issue Date

發文字號：0891100790  
Serial No.

申請日期	88.10.26
申請號碼	88218182
類別	

A4  
C4

(以上各欄由本局填註)

發 明 專 利 說 明 書		
一、發明名稱	中 文	離心觸動式之警示、裝飾器
	英 文	
二、發明人	姓 名	謝 振 發
	國 籍	中 華 民 國
	住、居所	台北縣板橋市三民路二段245巷4弄32號
三、申請人	姓 名 (名稱)	昱昌企業有限公司
	國 籍	中 華 民 國
	住、居所 (事務所)	台北縣板橋市三民路二段245巷4弄32號
	代 表 人 名 姓 名	陳 啓 宗

本紙張尺寸適用中國國家標準 (CNS) A4規格 (210×297公釐)

C5  
D5

四、中文創作摘要 (創作之名稱：離心觸動式之警示、裝飾器)

一種離心觸動式之警示、裝飾器，係包括：一警示電路及一本體；其中警示電路係固裝於本體中，含有一中央處理電路及一閃爍控制電路，令警示電路為一離心式感應開關操作地啓閉警示電路之電源電路，如是當警示電路隨本體受一離心作用時，離心式感應開關即導通電源電路，供電中央處理電路及閃爍控制電路，使閃爍控制電路觸發多數發光體向外投光示警，另警示電路之電源電路中猶可串接一光敏電阻，常時呈一斷路，令光敏電阻置於昏暗環境中，即不受光時，光敏電阻呈一開路，以控制警示電路須於昏暗之環境條件下始能向外投光閃爍示警並產生裝飾效果；如是本創作揭示之警示電路便可以本體固裝於自行車車輪之輪輻上或鎖設於機車、汽車車輪之進氣閥上，而隨車輪旋轉而向外持續地投光閃爍示警及裝飾用。

英文創作摘要 (創作之名稱：

C7  
D7

## 五、創作說明 ( )

### 〔本創作所涉及之領域〕

本創作係有關於一種離心觸動式之警示、裝飾器，尤指一種藉由離心作用，觸發多數發光體向外投光閃爍示警及裝飾用者。

### 〔創作背景〕

目前騎乘自行車、機車或開車者越來越多，對於騎乘時或開車時之安全亦越加重視；目前一般自行車之騎乘者為增加騎乘時之安全，常於自行車之輪輻上固裝有反光板，使周圍來車之燈光照射後產生反光，而生警示、裝飾之效，惟因反光板產生之波長較短，且必須有光線照射後才有反射光產生，故警示、裝飾效果較差，尤其在昏暗之環境下更不易獲得警示、裝飾效果。

而目前尚有揭示一種夜光珠，滑置於自行車之輪輻上隨車輪旋轉，以於行經昏暗環境時，可藉多數之夜光珠發光警示周圍來車，惟該夜光珠在長期使用後，便會逐漸褪色失去原有之量度，而降低警示功效，必須重新更換，而顯現其缺點。此外，由於此種夜光珠無閃爍發光之作用，因此其裝飾效果極為有限。

本案創作人有鑑於此，乃加予研究創新，揭示出一種新穎離心觸動式之警示、裝飾器。

### 〔創作目的〕

本創作之目的旨在提供一種離心觸動式之警示、裝飾器，係包括：一警示電路及一本體者；其中該警示電路係固裝於該本體中，含有一中央處理電路及一閃爍控制電

C7  
D7

## 五、創作說明 ( )

路，令該警示電路為一離心式感應開關操作地啓閉該警示電路之電源電路，如是當該警示電路隨該本體受一離心作用時，該離心式感應開關即導通該電源電路，供電該中央處理電路及該閃爍控制電路，使該閃爍控制電路觸發多數發光體，以多種燈光閃爍圖樣之變化向外投光示警者，另該警示電路之電源電路中猶串接一光敏電阻常時呈一斷路，令該光敏電阻置於昏暗環境中，即不受光時，該光敏電阻呈一閉路，以控制該警示電路須於昏暗之環境條件下始能向外投光閃爍示警並產生裝飾效果；如是本創作揭示之警示電路便可以該本體固裝於自行車車輪之輪輻上或鎖設於機車、汽車車輪之進氣閥上，而隨該車輪旋轉而以多種燈光閃爍圖樣之變化向外投光示警及裝飾用者。

本創作之可取實體，可由以下之說明及所附之圖式，得以明晰之。

## 〔圖式之簡單說明〕

第一圖：係本創作警示、裝飾器之電路示意圖。

第二圖：係本創作之中央處理電路之方塊圖。

第三圖：係本創作之閃爍控制電路方塊圖。

第四圖：係顯示本創作可取之閃爍時序圖。

第五圖：係本創作離心式感應開關之立體示意圖。

第六圖：係本創作之運用於自行車上之警示、裝飾器分解圖。

第七圖：係顯示第六圖所示實施例之應用狀態示意圖。

第八圖：係顯示本創作運用機車上之警示、裝飾器立體分

C7  
D7

## 五 創作說明 ( )

解圖。

第九圖：係顯示第八圖所示實施例之應用狀態示意圖。

[元件標號說明]

- |                      |               |
|----------------------|---------------|
| (1) 警示電路             | (11) 中央處理電路   |
| (111) 邏輯控制器          | (112) 振盪器     |
| (113) 計數器            | (114) 發光訊號產生器 |
| (115) 頻率產生器          | (12) 閃爍控制電路   |
| (13) 離心式感應開關         | (131) 導電板     |
| (132) 彈性臂            | (132a) 搭接部    |
| (14) 電源電路            |               |
| (2)(2a) 本體           | (21)(21a) 容置室 |
| (211)(211a) 透明視窗     | (22) 固定板      |
| (221) 凹槽             | (23) 壓板       |
| (24) 固定螺孔            |               |
| (3) 自行車車輪            | (31) 輪輻       |
| (4) 機車車輪             | (41) 進氣閥      |
| (411) 外螺紋部           |               |
| (L1、L2、L3、L4、L5) 發光體 |               |
| (CDS) 光敏電阻           |               |
| (LEH) 高準位觸發訊號        |               |

[本創作之技術內容]

請參閱第一至七圖所示，本創作係有關於一種離心觸動式之警示、裝飾器，係包括：一警示電路(1)及一本體(2)者；其中該警示電路(1)係固裝於該本體(2)中，含



C7  
D7

## 五、創作說明 ( )

有一中央處理電路(11)及一閃爍控制電路(12)，令該警示電路(1)為一離心式感應開關(13)操作地啓閉該警示電路(1)之電源電路(14)，如是當該警示電路(1)隨該本體(2)受一離心作用時，該離心式感應開關(13)即導通該電源電路(14)，供電該中央處理電路(11)及該閃爍控制電路(12)，使該閃爍控制電路(12)觸發多數發光體(L1、L2、L3、L4、L5)，以多種燈光閃爍圖樣之變化向外投光示警及裝飾用者，另該警示電路(1)之電源電路(14)中猶串接一光敏電阻(CDS)，常時呈一斷路，令該光敏電阻(CDS)置於昏暗環境中，即不受光時，該光敏電阻(CDS)呈一閉路，以控制該警示電路(1)須於昏暗之環境條件下始能向外投光閃爍示警並產生裝飾效果；如是本創作所揭示之警示電路(1)便可以該本體(2)固裝於自行車車輪(3)之輪輻(31)上或鎖設於機車車輪(4)之進氣閥(41)【如第八、九圖所示】上，而隨該車輪旋轉而以多種燈光閃爍圖樣之變化向外投光示警及裝飾用者。

如第一、二、三圖所示，本創作所揭示之中央控制電路(11)，係含有一邏輯控制器(111)以串聯一振盪器(112)及一計數器(113)，以於邏輯控制器(111)接受一高準位觸發訊號(LEH)後，觸發一發光訊號產生器(114)及一頻率產生器(115)向外發出一輸出訊號至該閃爍控制電路(12)，使該閃爍控制電路(12)接受該發光訊號產生器(114)訊號後觸發各該發光體(L1、L2...L5)。

C/  
D7

## 五、創作說明 ( )

向外發光警示並產生裝飾效果，或於接受該頻率產生器(115)之訊號後觸發一嗡鳴器向外發出聲響者。

如第四圖所示，本創作所揭示之警示電路(1)係可令該警示電路(1)於第一次觸發高準位訊號(LEH)時，逐一觸發部份之發光體【例如L1、L2、L3】向外投光閃爍，待下次觸發高準位訊號(LEH)時再全數觸發各發光體(L1、L2、...L5)向外投光閃爍；惟本創作對於各該發光體(L1、L2、...L5)之投光閃爍方式，係以多種燈光閃爍圖樣之變化向外投光示警並產生裝飾效果，其變化方式並不予自限，而可為其它之閃爍方式者。另上述各該發光體(L1、L2、...L5)係可取自發光二極體或其它之發光元件者，本創作並不予自限之。

本創作所揭示之離心式感應開關(13)，如第五圖所示，係含有一導電板(131)連通該電源電路(14)之第一端者；以及一彈性臂(132)，令該彈性臂(132)之底端係連通該電源電路(14)之第二端，且於該彈性臂(132)之頂端固連一搭接部(132a)，並令該搭接部(132a)常時與該導電板(131)呈一斷路，且令該離心式感應開關(13)受一定量離心作用時，該彈性臂(132)之搭接部(132a)係朝該導電板(131)方向偏離，且與該導電板(131)接觸呈一閉路狀態，使該電源電路(14)形成閉路，以供電該警示電路(1)者。

如第六、七圖所示，本創作所揭示之本體(2)，係含有一容置室(21)，於該容置室(21)之外側至少界定一

C/  
D7

## 五、創作說明 ( )

透明視窗 (211)，以供固裝該警示電路 (1) 於該容置室 (21) 內，並使該警示電路 (1) 可自該透明視窗 (211) 向外投光閃爍示警者；兩固定板 (22) 分別自該容置室 (21) 之兩側向外連伸，令各該固定板之一側凹設一凹槽 (221)，以供跨置自行車車輪 (3) 之輪輻 (31) 於內者；以及兩壓板 (23) 分別對應地鎖固於各該固定板 (22) 外，以與各該固定板 (22) 緊夾各該輪輻 (31) 於內，以將該本體 (2) 固裝於該自行車車輪 (3) 之兩輪輻 (31) 間，而隨該自行車車輪 (3) 旋轉者。

如第八、九圖所示，本創作所揭示之本體 (2a) 係可修飾地含有：一容置室 (21a)，於該容置室 (21a) 之外側至少界定一透明視窗 (211a)，以供固裝該警示電路 (1) 於該容置室 (21a) 內，並使該警示電路 (1) 可自該透明視窗 (211a) 向外投光閃爍示警並產生裝飾效果；以及一固定螺孔 (24) 凹設於該本體 (2a) 之底端，令該固定螺孔 (24) 係吻合機車車輪 (4) 之進氣閥 (41) 頂段之外螺紋部 (411)，以鎖固於該進氣閥 (41) 上，隨該機車車輪 (4) 旋轉者。

## 〔本創作之功效及特點〕

由於本創作所揭示之警示電路 (1) 係由一離心式感應開關 (13) 操作地啓閉該電路，或配合一光敏電阻 (CDS) 啓閉該警示電路 (1)，故本創作並不需使用者以手動方式啓閉電源開關，本創作於騎乘者騎乘自行車、機車或開車行經較昏暗處，或於夜間騎乘或開車時，該警示電路 (1)

C7  
D7

##### 五、創作說明 ( )

即自動地開啓，並觸發各該發光體 (L1、L2...L5) 不斷地向外投光閃爍示警，十分符合夜間行車安全需求，於使用上極為便利，而顯本創作之新穎性與實用性。同時還可藉其多種變化之發光圖樣產生炫麗的裝飾效果。

本創作所揭示之結構、形狀，可於不違本創作之精神及範疇下予以修飾應用，本創作並不予自限。

83  
CB  
88  
AB

## 六、申請專利範圍

1. 一種離心觸動式之警示、裝飾器，係包括：一警示電路及一本體者；其中該警示電路係固裝於該本體中，含有一中央處理電路及一閃爍控制電路，令該中央控制電路，係含有一邏輯控制器以串聯一振盪器及一計數器，並於邏輯控制器接受觸發訊號後，觸發一發光訊號產生器向外發出一輸出訊號至該閃爍控制電路，使該閃爍控制電路至少觸發兩發光體向外發光閃爍示警，且令該警示電路之電源電路串聯一離心式感應開關，令該離心式感應開關常時使該警示電路之電源電路呈一開路，並令該離心式感應電開關受一離心作用時，使該電源電路呈一閉路，以供電該警示電路觸發多數發光體向外投光示警並產生裝飾效果。
2. 如申請專利範圍第1項離心觸動式之警示、裝飾器，其中該警示電路之電源電路中猶串接一光敏電阻，常時呈一斷路，令該光敏電阻置於昏暗環境中時，該光敏電阻呈一閉路，以導通該電源電路者。
3. 如申請專利範圍第1項離心觸動式之警示、裝飾器，其中該離心式感應開關，係含有一導電板連通該電源電路之第一端者；以及一彈性臂，令該彈性臂之底端係連通該電源電路之第二端，且於該彈性臂之頂端固連一搭接部，並令該搭接部常時與該導電板呈一斷路，且令該離心式感應開關受一定量離心作用時，該彈性臂之搭接部係朝該導電板方向偏離，且與該導電

B8  
C8  
D8

## 六、申請專利範圍

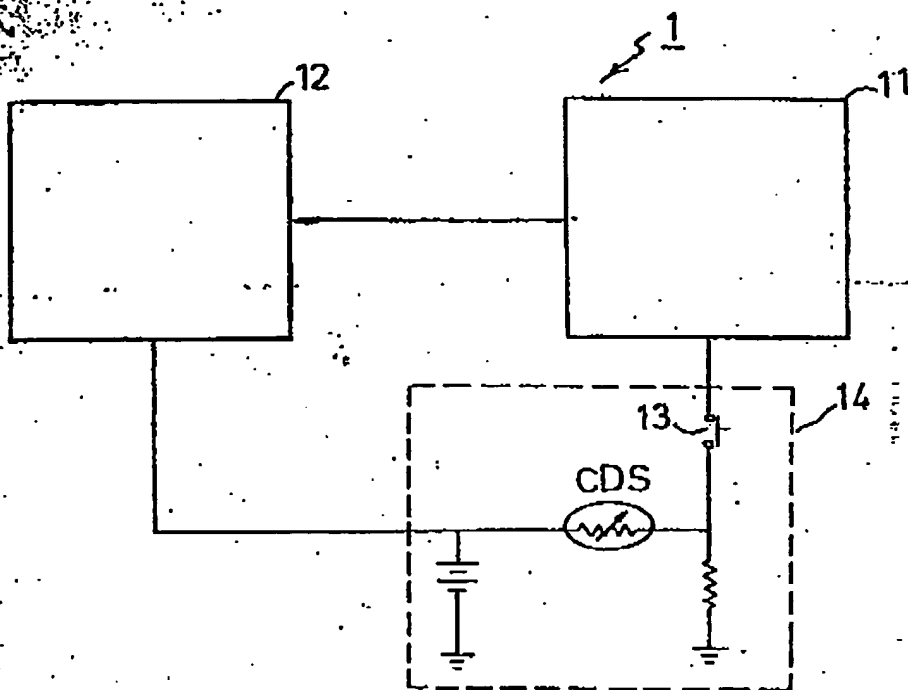
板接觸呈一閉路狀態，使該電源電路形成閉路，以供電給該警示電路者。

4. 如申請專利範圍第 1 項離心觸動式之警示、裝飾器，其中該本體，係含有：一容置室，於該容置室外側至少界定一透明視窗，以供固裝該警示電路於該容置室內，並使該警示電路可自該透明視窗向外投光閃爍示警者；兩固定板，分別自該容置室之兩側向外連伸，令各該固定板之一側凹設一凹槽，以供跨置自行車車輪之輪輻於內者；以及，兩壓板，分別對應地鎖固於各該固定板外，以與各該固定板緊夾各該輪輻於內，以將該本體固裝於該自行車車輪之兩輪輻間，而隨該車輪旋轉者。

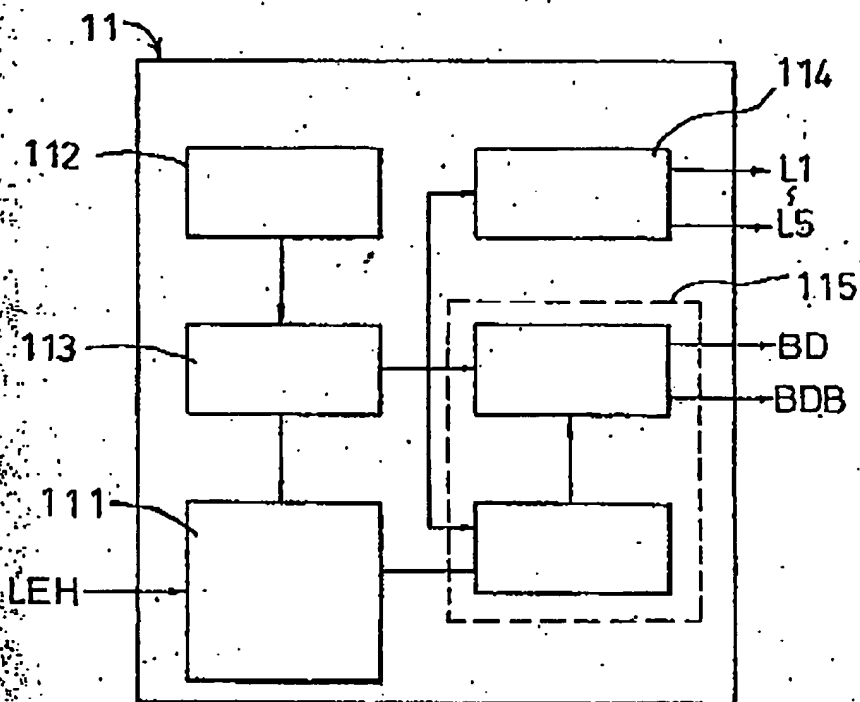
5. 如申請專利範圍第 1 項離心觸動式之警示、裝飾器，其中該本體係含有：一容置室，於該容置室外側至少界定一透明視窗，以供固裝該警示電路於該容置室內，並使該警示電路可自該透明視窗向外投光閃爍示警者；以及，一固定螺孔，設置於該本體之底端，令該固定螺孔係吻合車輪之進氣閥頂段之外螺紋部，以鎖固於該進氣閥上，隨該車輪旋轉者。

A9  
B8  
C9  
D9

圖式



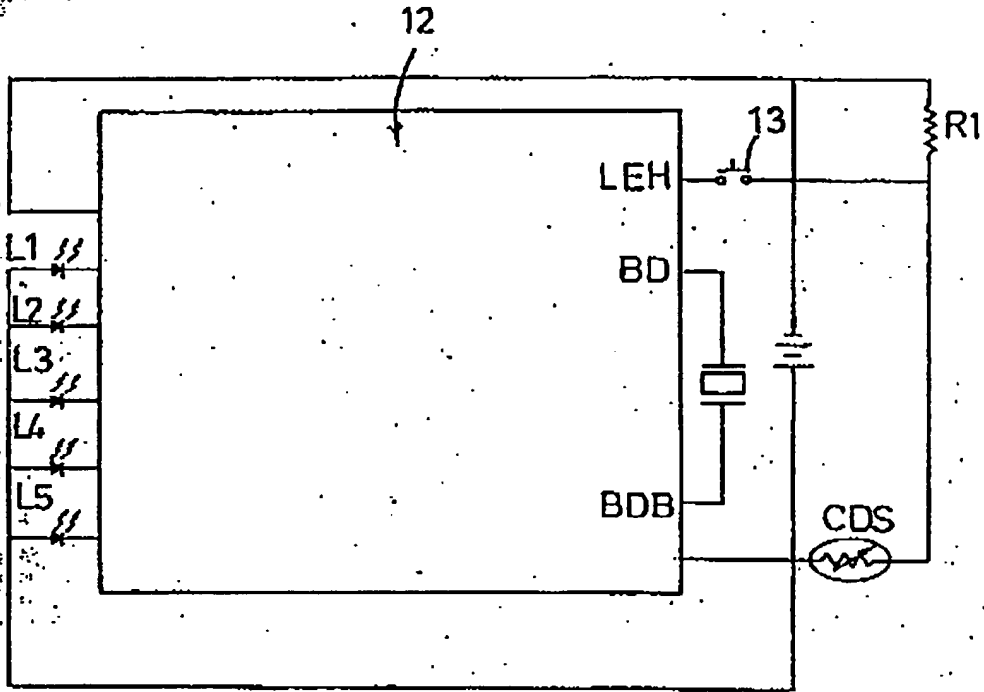
第一圖



經濟部中央標準局員工消費合作社印製

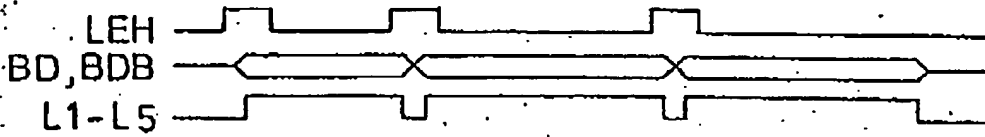
A9  
B9  
C9  
D9

圖式



1. 圖
2. 須
3. 給
4. 各
5. 須
6. 圖

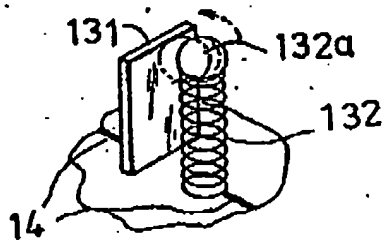
第三圖



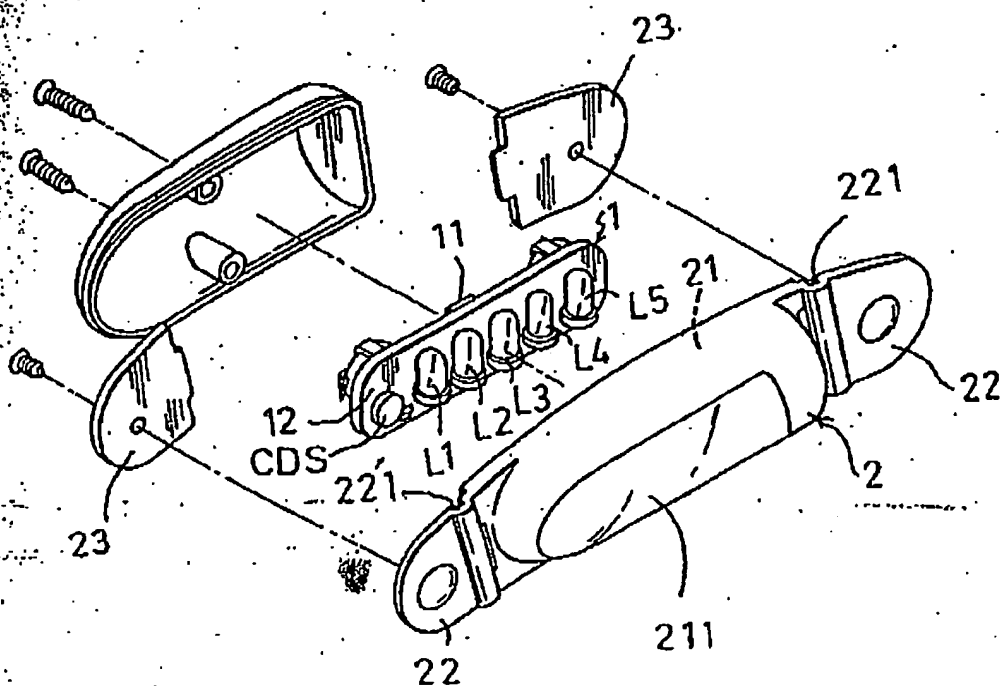
第四圖



A9  
B9  
C9  
D9



第五圖



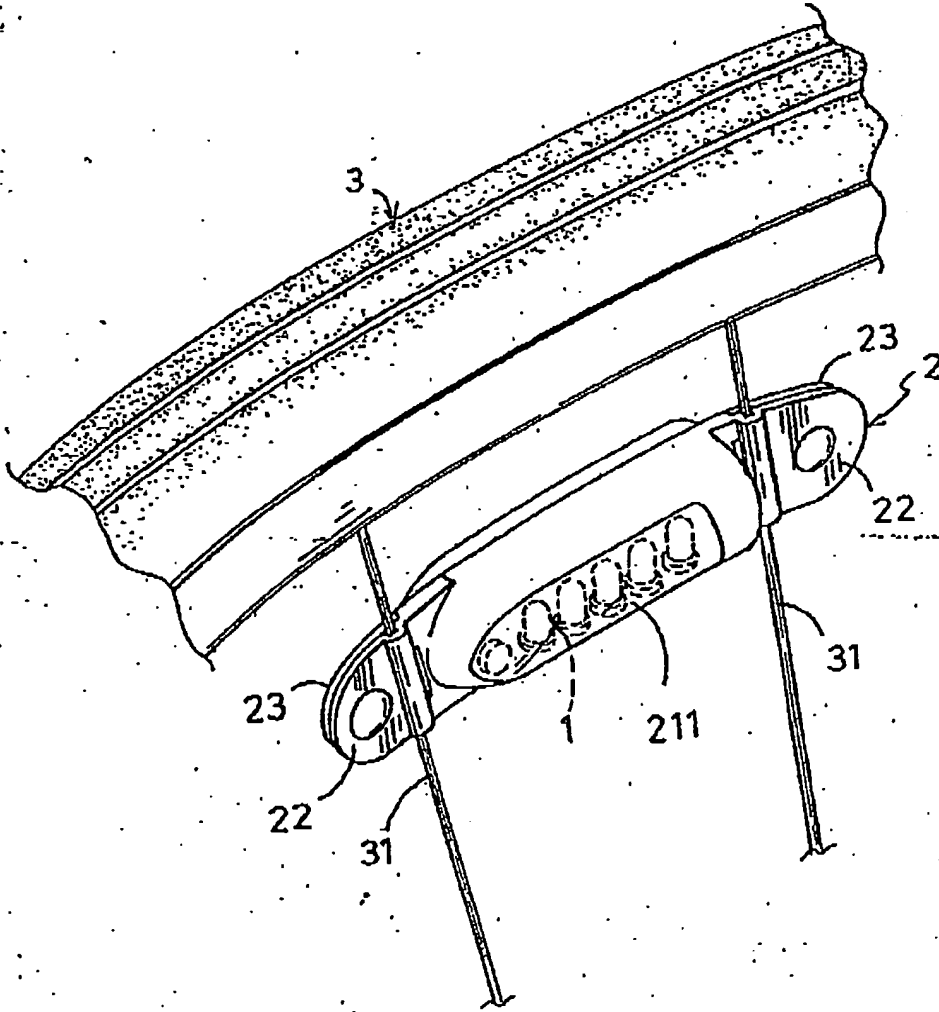
第六圖

1. 圖
2. 須
3. 給
4. 各
5. 須
6. 圖

經濟部中央標準局員工消費合作社印製

69  
B9  
C9  
D9

1. 圖式
2. 剖面
- 繪製
3. 各件
4. 剖面
- 圖式
5. 有
6. 剖面

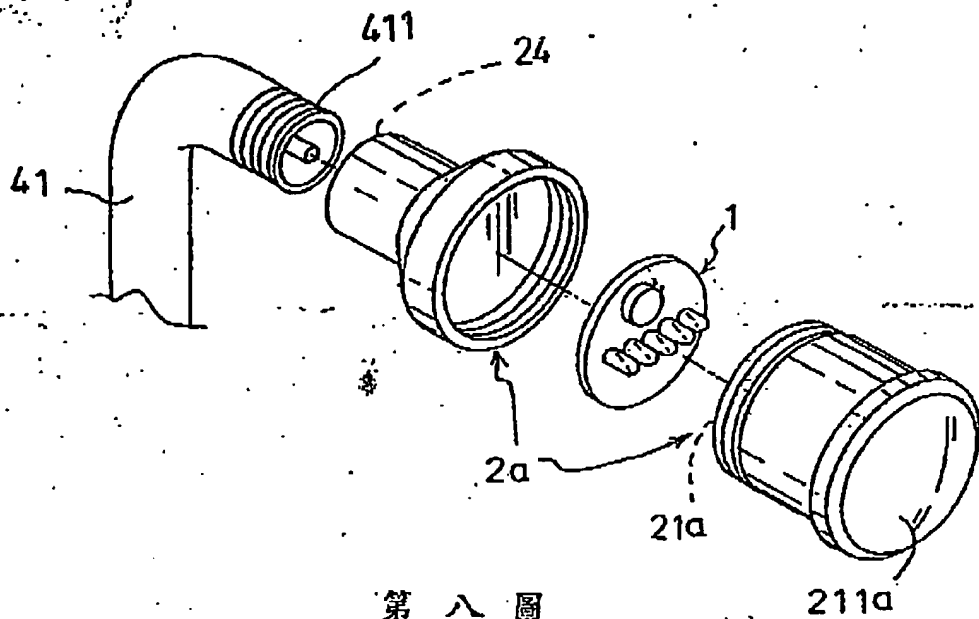


第七圖

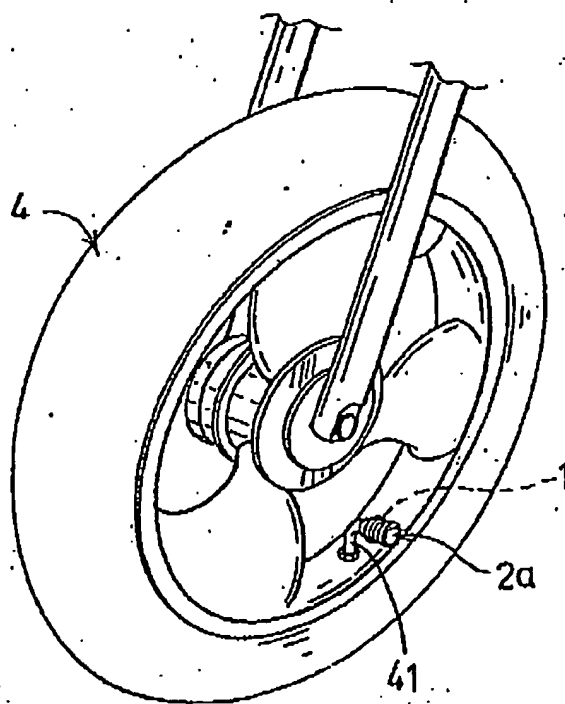
經濟部中央標準局員工消費合作社印製

AV  
B9  
C9  
D9

圖式



第八圖



第九圖

經濟部中央標準局員工消費合作社印製

**The Intellectual Property Office of  
The Ministry of Economic Affairs  
Republic of China**

This is to certify that the annexed is a true copy from the records of this office of the application as originally filed, which is identified hereunder.

Application date: October 26, 1999  
Application No.: 088218182

Applicant: Yu Chang Enterprises Co., Ltd.

Director General:  
[signature:] Chen Mingpang

Issue date: June 12, 2000  
Serial No.: 0891100790

Date of Application	October 26, 1999
Case Number	88218182
Class	

(Space above for office use only)

Invention New Type		Patent Specifications	
I. Invention New Type	Chinese	Centrifugal Motion Warning and Decorative Device	
	English		
II. Inventor Creator	Name	Hsieh Chen-fa	
	Nationality	Republic of China	
	Address	#32, Alley 4, Lane 245 Sanmin Road, Section 2 Pan-ch'iao City, Taipei County	
III. Applicant	Name (Title)	Yu Chang Enterprises Co., Ltd.	
	Nationality	Republic of China	
	Address (office)	#32, Alley 4, Lane 245 Sanmin Road, Section 2 Pan-ch'iao City, Taipei County	
	Name of Representative	Ch'en Ch'i-tsung	

**Four. Excerpt of Invention in Chinese (Title of Invention: Centrifugal Motion Warning and Decorative Device)**

A type of centrifugal motion warning and decorative device, which includes: a warning circuit and a main body; of which the warning circuit is secured on the main body, which contains a central processing circuit and a flash control circuit. This makes the warning circuit a power circuit with a centrifugal switch of the warning circuit operated by motion. Therefore, when the warning circuit is subject to a centrifugal force together with the main body, the centrifugal sensing switch will open and close the power circuit for the central processing circuit and flash control circuit, so that the flash control circuit will give off an external light for warning. Also, the power circuit for the central processing circuit may be serially connected to a photosensitive resistance, which is a constant open circuit. When placed in a dark environment, which means that when not exposed to light, the photosensitive resistance is a closed circuit, so as to control the warning circuit, which can only project an external flashing warning light in dark environmental conditions and which can generate a decorative effect; therefore, the main body of the warning circuit disclosed by this invention may be secured on the spokes of bicycle wheels or locked onto the wheel air inlet valves of motorcycles and automobiles, so that they may continuously project an external flash warning and decorative light together with the turning of the wheels.

**Excerpt of Invention in English (Title of Invention:**

)

## Five. Description of the Invention ( )

### [The fields involved in this invention]

This invention involves a centrifugal motion warning and decorative device, and specifically refers to a device that activates a multitude of light-emitting objects that project flashing light externally for warning and decorative purposes.

### [Background of the invention]

Currently, there are increasing numbers of people who ride bicycles, motorcycles and who drive automobiles, who attach greater and greater importance to safety during riding or driving; currently, generally, bicycle riders affix reflectors onto their bicycle spokes, which serve as a warning and decorative device by reflecting lights emitted from surrounding vehicles. But due to the short wavelength of such reflectors and the fact that they can only generate reflections when illuminated by light, the warning and decorative effect is rather poor, and it is especially difficult to generate a warning and decorative effect in dark environments.

Currently, a luminous globe has also been disclosed, which slides on spokes of bicycles and which turns along with the wheels. In dark environments, a multitude of such luminous globes emit light to warn surrounding vehicles, except that such luminous globes suffer from a defect in that they fade in their original brightness after long-standing usage, which reduces the warning effect and which must be replaced. In addition, since such luminous globes do not have flash and light-emitting functions, their decorative functions are extremely limited.

In view of the above, the inventor of this invention engaged in research and innovations, and hereby discloses a novel centrifugal motion warning and decorative device.

### [Purpose of the invention]

This invention is designed to provide a centrifugal motion warning and decorative device, which includes: a warning circuit and main body; of which the warning circuit is secured on the main body, which contains a central processing circuit and a flash control circuit. This makes the warning circuit a power circuit with a centrifugal switch of the warning circuit operated by motion. Therefore, when the warning circuit is subject to a centrifugal force together with the main body, the centrifugal switch operated by motion will put through the power circuit for the central processing circuit and flash control circuit, so that the flash control circuit will give off an external light for warning. Also, the power circuit for the central processing circuit may be serially connected to a photosensitive resistance, which is a constant open circuit. When placed in a dark environment, which means that when not exposed to light, the photosensitive resistance is a closed circuit, so as to control the warning circuit, which can only project an external flash warning light in dark environmental conditions and which can generate a decorative effect; therefore, the main body of the warning circuit disclosed by this invention may be secured on the spokes of bicycle wheels or locked onto the wheels of air inlet valves of motorcycles and automobiles, so that they may continuously project an external flash warning and

decorative light together with many variations of light flashing patterns when the wheels are turned.

An actual example of this invention may be taken to clarify it with the following description and the figures attached.

[A brief description of the figures]

- Figure 1: a sketch of the circuits of the warning and decorative device in this invention.  
 Figure 2: a square diagram of the central processing circuits in this invention.  
 Figure 3: a square diagram of the flash control circuits in this invention.  
 Figure 4: a time sequence diagram of the flash control circuits obtainable in this invention.  
 Figure 5: a three-dimensional sketch of the centrifugal sensing switch in this invention.  
 Figure 6: an exploded diagram of the warning and decorative device used on bicycles in this invention.  
 Figure 7: a sketch indicating the status of application of the actual example used in Figure 6.  
 Figure 8: a three-dimensional exploded diagram of the warning and decorative device used on motorcycles in this invention.  
 Figure 9: a sketch indicating the status of application of the actual example used in Figure 8.

[A description of component numbering]

- |   |                                       |
|---|---------------------------------------|
| (1) Warning circuit                         | (11) Central processing circuit       |
| (111) Logic control circuit                 | (12) Oscillator                       |
| (113) Counter                               | (114) Light-emitting signal generator |
| (115) Frequency generator                   | (112) Flash control circuit           |
| (13) Centrifugal sensing switch             | (131) Conductive board                |
| (132) Flexible arm                          | (132a) Connecting section             |
| (14) Power circuit                          |                                       |
| (3) (2a) Main body                          | (21) (21a) Storage chamber            |
| (211) (211a) Transparent viewing window     | (22) Fixation board                   |
| (221) Groove                                | (23) Pressure plate                   |
| (24) Secured screw hole                     |                                       |
| (3) Bicycle wheel                           | (31) Spokes                           |
| (4) Motorcycle wheel                        | (41) Air inlet valve                  |
| (411) External thread section               |                                       |
| (L1, L2, L3, L4, L5) light-emitting objects |                                       |
| (CDS) Photosensitive resistance             |                                       |
| (LEH) High-level touch generated signal     |                                       |

[The technical contents of this invention]

Please refer to Figures 1 through 7. This invention is about a centrifugal motion warning and decorative device, which includes: a warning circuit (1) and a main body (2); of which said warning circuit (1) is secured on said main body (2), which contains a central processing circuit (11) and a flash control circuit (12). This makes said warning circuit



(1) a power circuit (14) with a centrifugal switch (13) of the warning circuit operated by motion. Therefore, when said warning circuit (1) is subject to a centrifugal force together with the main body (2), said centrifugal sensing switch (13) operated by motion will open said power circuit (14) to supply power for said central processing circuit (11) and said flash control circuit (12), so that said flash control circuit (12) will trigger a multitude of light-emitting objects (L1, L2, L3, L4, L5), which may continuously project an external flashing warning and decorative light with many variations of light flashing patterns. Also, said power circuit (14) for the warning circuit (1) is serially connected to a photosensitive resistance (CDS), which is a constant open circuit. When placed in a dark environment, which means that when not exposed to light, said photosensitive resistance (CDS) is a closed circuit, so as to control the warning circuit (1), which can only project an external flashing warning light in dark environmental conditions and which can generate a decorative effect; therefore, said warning circuit (1) disclosed by this invention may be secured on the spokes (31) of bicycle wheels (3) or locked onto the air inlet valves (41) of motorcycle wheels (4) together with said main body (2) [as shown in Figures 8 and 9], so that they may continuously project an external flashing warning and decorative external light with many variations of light flashing patterns upon the turning of said wheels.

As indicated in Figures 1, 2 and 3, the central control circuit (11) disclosed by this invention contains a logic controller (111), which is serially connected to an oscillator (112) and a counter (113). Upon receiving a high-level triggered signal (LEH), the logic controller (111) triggers a light-emitting signal generator (114) and a frequency generator (115), which then send an output signal externally to said flash control circuit (12), so that upon receiving the signal from said light-emitting signal generator (114), said flash control circuit (12) will trigger the various light-emitting objects (L1, L2...L5) to give external light as a warning and to produce a decorative effect, or to generate external sounds by triggering a buzzer, upon receiving the signal from said frequency generator (115).

As indicated in Figure 4, the warning circuit (1) disclosed by this invention enables said warning circuit (1) to trigger, one by one, some of the light-emitting objects (such as L1, L2...L5) to project an external flashing light upon triggering the high-level signal (LEH) for the first time, and then trigger all light-emitting objects (L1, L2...L5) to project an external flashing light upon triggering the high-level signal (LEH) the following time; but the projected light flashing from the light-emitting objects (such as L1, L2...L5) in this invention is effected by projecting external flashing lights in various patterns for warning and decorative purposes. Such variation patterns are not subject to self-imposed limitations and other flashing methods may also be used. In addition, said light-emitting objects (such as L1, L2...L5) may be light-emitting components from light-emitting diodes or other light-emitting components, and are not subject to self-imposed limitations in this invention.

The centrifugal sensing switch (13) disclosed by this invention as shown in Figure 5 contains a conductive board (131) connected to the first end of said power circuit (14); and a flexible arm (132). The bottom end of said flexible arm (132) is connected to the

second end of said power circuit (14), and a connecting section (132a) is secured onto the top of said flexible arm (132), so that said connecting section (132a) is constantly an open circuit with said conductive board (131), and when said centrifugal sensing switch (13) is subject to a certain measure of centrifugal force, the connecting section (132a) to said flexible arm (132) deviates in the direction of said conductive board (131), and is in a closed circuit state upon contact with said conductive board (131). This turns said power circuit (14) into a closed circuit so as to supply power for the warning circuit (1).

As shown in Figures 6 and 7, the main body (2) disclosed by this invention contains the following: a storage chamber (21), and on the outer flank of said storage chamber (21), there is defined at least one transparent viewing window (211), so that said warning circuit (1) can be secured inside said storage chamber (21), to enable said warning circuit (1) to project flashing warnings externally through said transparent viewing window (211); two mounting boards (22) extend externally from the two sides of said storage chamber (21), respectively. A groove (221) is formed on the hollow part of the side of said mounting boards (22), so as to accommodate the horizontal placement of the spokes (31) of bicycle wheels (3) inside; two pressure boards (23) are respectively and correspondingly locked onto the outside of said various mounting boards (22), so that said various mounting boards (22) are securely fastened inside said spokes (31), said main body (2) is secured between two spokes (31) of said bicycle wheel (3), and turns together with said bicycle wheel (3).

As shown in Figures 8 and 9, the main body (2a) disclosed by this invention may decoratively contain: a storage chamber (21a), and on the outer flank of said storage chamber (21a), there is defined at least one transparent viewing window (211a), so that said warning circuit can be secured inside said storage chamber (21a), to enable said warning circuit (1) to project flashing warnings externally through said transparent viewing window (211a) and produce a decorative effect; and a secured screw hole (24) placed in a groove on the bottom end of said main body (2a), so that said secured screw hole (24) matches the thread (411) on the top of the air inlet valve (41) of the wheel (4) of a motorcycle, can be securely fastened to said air inlet valve (41) and turn together with said motorcycle wheel (4).

[The functions and characteristics of this invention]

Since the warning circuit (1) disclosed by this invention is a centrifugal warning circuit (13) that turns said circuit on and off through sensing, or is supported by a photosensitive resistance (CDS) that turns said warning circuit (1) on and off, this invention does not require the user to turn power on and off manually. This invention makes it possible for riders of bicycles and motorcycles and motorists who pass dark places or who ride or drive at night to have said warning circuit (1) turned on automatically, and to trigger said light-emitting objects (L1, L2... L5) to continuously project a flashing warning externally, which quite meets the requirements for night travel safety and which is extremely convenient to use, thus showing the novelty and practicality of this invention. At the same time, the various patterns of flashing also produce a spectacular decorative effect.

The structure and shape disclosed by this invention may be subject to finishing and applications provided that the spirit and scope of this invention is not violated, and shall not be subject to self-imposed limitations of this invention.

#### Six. Scope of Patent Application

1. A type of centrifugal motion warning and decorative device, which includes: a warning circuit and a main body, of which the warning circuit is secured on the main body, which contains a central processing circuit and a flash control circuit. Said central processing circuit contains a logic controller to be serially connected to an oscillator and a counter, and after the logic controller receives a triggering signal, it activates a light-emitting signal generator to send an output signal to said flash control circuit, so that said flash control circuit triggers at least two light-emitting objects to send flashing signals externally, and so that the power circuit for said warning circuit serially connects to a centrifugal sensing switch, to enable said centrifugal sensing switch to be a constant open circuit, and so that said power circuit becomes a closed circuit when said centrifugal sensing switch is subject to a centrifugal force, thus providing power for said warning circuit to trigger a multitude light-emitting objects to externally project light for warning and decorative purposes.
2. With regard to the centrifugal motion warning and decorative device in Claim 1 of the scope of patent application, the power circuit for said warning circuit is also serially connected to a photosensitive resistance, which is a constant open circuit. This means that when the photosensitive resistance is placed in a dark environment, said photosensitive resistance becomes a closed circuit and opens said power circuit.
3. With regard to the centrifugal motion warning and decorative device in Claim 1 of the scope of patent application, its centrifugal motion switch contains a conductive board connected to the first end of said power circuit; and a flexible arm. The bottom end of said flexible arm is connected to the second end of said power circuit, and a connecting section is secured onto the top of said flexible arm, so that said connecting section is constantly an open circuit with said conductive board, and when said centrifugal sensing switch is subject to a certain measure of centrifugal force, the connecting section to said flexible arm deviates in the direction of said conductive board, and is in a closed circuit state upon contact with said conductive board. This turns said power circuit into a closed circuit so as to supply power for the warning circuit.
4. With regard to the centrifugal motion warning and decorative device in Claim 1 of the scope of patent application, its main body contains the following: a storage chamber, and on the outer flank of said storage chamber, there is defined at least one transparent viewing window, so that said warning circuit can be secured inside said storage chamber, to enable said warning circuit to project flashing warnings externally through said transparent viewing window; two mounting boards extend externally from the two sides of said storage chamber, respectively. A groove is formed on the hollow part of the side of said mounting plates, so as to accommodate the horizontal placement of the spokes of bicycle wheels inside; two pressure boards are respectively and correspondingly locked onto the outside of said various mounting boards, so that said various mounting boards are securely fastened inside said spokes, said main body is secured between two spokes of said bicycle wheel, and turns together with said bicycle wheel.

5. With regard to the centrifugal motion warning and decorative device in Claim 1 of the scope of patent application, its main body contains the following: a storage chamber, and on the outer flank of said storage chamber, there is defined at least one transparent viewing window, so that said warning circuit can be secured inside said storage chamber, to enable said warning circuit to project flashing warnings externally through said transparent viewing window and produce a decorative effect; and a secured screw hole placed in a groove on the bottom end of said main body, so that said secured screw hole matches the thread on the top of the air inlet valve of the wheel of a motorcycle, can be securely fastened to said air inlet valve and turn together with said motorcycle wheel.

#### Figures

Figure 1  
Figure 2  
Figure 3  
Figure 4  
Figure 5  
Figure 6  
Figure 7  
Figure 8  
Figure 9

Patent Certificate of the Republic of China

New Type No. 182393

Name of the new type: Oscillating Touch Warning and Decorative Device

Patent Holder: Yu Chang Enterprises Co. Ltd.

Creator: Hsieh Chen-fa

Term of patent: October 11, 2001 to June 13, 2012

The patent holder has obtained a patent for the aforementioned new type in accordance with the provisions of "The Patent Law."

Director General:

[signature:] Chen Mingpang

[month illegible] 15, [year illegible]

[rectangular seal:]

The Intellectual Property Office of  
The Ministry of Economic Affairs  
Republic of China